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| 09/625,921 | 07/26/2000 | David A. Strickler | 1-14455 | 8181 |

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| EXAMINER | |
|---|---|
| DICUS, TAMRA | |
| ART UNIT | PAPER NUMBER |
| 1774 | 9 |

DATE MAILED: 02/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

AS9

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/625,921 | STRICKLER ET AL. | |
| | Examiner | Art Unit | |
| | Tamra L. Dicus | 1774 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *15 January 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-5, 8-10, 12-16 are rejected under 35 U.S.C. 102(e) as being anticipated by USPN 6,231,971 to Terneu.

3. Terneu teaches a glazing panel having various solar screening properties. Terneu discovered that the inclusion of a fluorine doped tin oxide layer on an antimony doped tin oxide layer provided a low solar factor (solar energy) and emissivity see col. 5, lines 33-63 and patented claim 19. Terneu teaches the thickness of each coating ranges from 100 to 500 nm (1000 to 5000 Angstroms) (refer to col. 5-6, especially col. 5, line 33). Tables 1.2 and 1.3 teach antimony doped tin oxide from 1400 to 1800 Angstroms, meeting ranges of claims 2-4.

4. The emittance properties of the glass are inherent since the exact same materials are used (claims 8-9) see also col. 4, line 65- col. 5, line 10, lines 33-40.

5. Regarding claim 10, Terneu teaches a clear float glass ribbon at col. 6, lines 33-50 and Example 1.1.

6. Terneu teaches a tin/antimony molar ratio of 0.05 –0.5 (col. 6, lines 5+) meeting the limitations of claim 12.

7. Table 1.4 teaches Illuminant C above 59% regarding claims 13 and 14. All other properties listed are inherent since the exact same materials are used.

8. At col. 1, lines 27-30 teach Terneu's glass as an architectural window, regarding claim 15. Accordingly, the property U value of less than 0.4 is inherent (claim 16 ).

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,231,971 to Terneu et al.

11. While Terneu does not explicitly state the thickness between 2000 and 3500 Angstroms, Terneu teaches fluorine doped tin oxide may be used (although expensive) in application of an antimony doped tin oxide layer, having a thickness between 100 and 500 nm see col. 5, lines 33-42 and patented claim 19. The Examiner takes the position that since Terneu stated fluorine doped tin oxide may be used to make the combination glass, that the thickness of the combination applies to the layer of fluorine doped tin oxide, which would meet the range limitation of claims 6-7.

12. Claim 17, Terneu teaches a supplementary layer may be provided at col. 5, lines 40-42, referencing the antimony and fluorine doped tin oxide layers. While Terneu does not explicitly state the arrangement of Claim 17, it would have been obvious to one of ordinary skill in the art to modify this arrangement since the layers are deposited by CVD and Terneu claims at least two

coating layers of these coatings are sufficient to provide a solar glass substrate. See patented claim 19.

13. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,780,149 to McCurdy et al. in view of USPN 6,231,971 to Terneu et al.

Regarding claim 1, McCurdy teaches a coated glass article comprising a glass substrate of 3 mm thickness, and at least a first and second coating, one of which is a coating of antimony doped tin oxide wherein the glass article exhibits a selectivity of 10 or greater (see claim 6 and col. 5 and 7). McCurdy is silent to the second coating being fluorine doped tin oxide deposited on and adhering to the coating of antimony doped tin oxide. Terneu discovered that the inclusion of a fluorine doped tin oxide layer on an antimony doped tin oxide layer provided a low solar factor (solar energy) and emissivity see col. 5, lines 33-63 and patented claim 19. Therefore, it would be obvious to one having ordinary skill in the art to replace the second layer with a fluorine doped tin oxide in order to have lower solar factors and emissivity.

14. Regarding claims 2-7, McCurdy teaches the thickness of the first and second layers is dependent upon the desired solar performance of the stack (layered coatings) (col. 6, lines 57+). Terneu teaches the thickness of each coating ranges from 100 to 500 nm (1000 to 5000 Angstroms) (refer to col. 5-6, especially col. 5, line 33). Therefore, it would be obvious to a skilled artisan to modify the glass article of McCurdy with the teachings of Terneu to provide thicknesses within the claimed ranges to effect the solar performance.

15. Regarding claims 8 and 9, McCurdy further teaches a coated glass article exhibiting an emittance of less than 0.2 (see col. 7, lines 51+).

16. Regarding claim 10, McCurdy teaches a glass substrate is a clear float glass ribbon (Col. 11, lines 18+ and claim 5).

17. Regarding claim 11, McCurdy teaches an article exhibiting a neutral color having the values in the CIELAB system as claimed (see col. 7, lines 7+). Additionally, McCurdy teaches color being defined by the composition of the coated glass article and thickness of the coats (col. 6, line 64+), and specifically teaches a neutral color.

18. Terneu teaches a tin/antimony molar ratio of 0.05 –0.5 (col. 6, lines 5+) meeting the limitations of claim 12.

19. McCurdy at col. 7, lines 12+ teaches a glass article exhibiting a visible light transmittance (Illuminant C) of at least 60% and a total solar energy transmittance of less than 50% meeting the limitations of claims 13 and 14.

20. Regarding claims 15 & 16, McCurdy teaches an insulating glass unit for architectural glazings (col. 7, lines 24+) or window units (col. 1, lines 23+) having a U value (heat transfer coefficient) less than 0.4 (especially, col. 7, line 54+).

21. Regarding claims 17 and 18, McCurdy discussed above, further includes an iridescence-suppressing interlayer between the glass substrate and the antimony doped tin oxide layer. According to McCurdy this interlayer suppresses the observance of off angle colors and single, multiple, or gradient layer coatings are suitable (col. 2, lines 45+, especially lines 65+) and exhibits the required Illuminant C and solar energy transmittance exhibiting a neutral color having the values in the CIELAB system as claimed (see col. 7, lines 3+). McCurdy teaches color being defined by the composition of the coated glass article and thickness of the coats (col. 6, line 64+), and specifically teaches exhibiting a neutral color.

22. McCurdy further discloses the iridescence-suppressing interlayer comprising a layer of undoped tin oxide, and a layer of silica (see col. 9, lines 29+, patented claims 6, 10, and 14, col. 11 and 12), where each interlayer has a thickness selected such that the interlayer forms a combined total optical thickness of about $1/6^{th}$ to about $1/12^{th}$ of a 500 nm wavelength (col. 2, lines 66+, especially col. 4, lines 47+) addressing the instant claims 19 and 20. McCurdy also discloses the tin oxide deposited on and adheres to a glass substrate and a layer of silica is deposited and adhered to the tin oxide (see claims 6, 10, and 14, col. 8, lines1+, and col. 9, lines 25+).

23. Regarding claim 21, in several examples, McCurdy discloses how the thickness of the tin oxide and silica layers are between 150 and 350 angstroms (col. 8, lines 1+ and col. 9, lines 29+).

No patentable distinction is seen between the coated glass article of the combined references and that of the present claims.

24. Claims 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,780,149 to McCurdy et al. in view of USPN 6,231,971 to Terneu et al.

Regarding claim 22, McCurdy teaches an insulating glass unit comprising a first and second glass substrate, a multilayer coating stack of at least a first and second coating, one of which is a coating of antimony doped tin oxide wherein the glass article exhibits a selectivity of 10 or greater (satisfying 13 or more) on a clear glass substrate of 3 mm thickness (see claims 6 and 22, col. 7, lines 24+, col. 9, and col. 10). McCurdy teaches the thickness of the first and second layers is dependent upon the desired solar performance of the stack (layered coatings) (col. 6, lines 57+). McCurdy is silent to the second coating being fluorine doped tin oxide of the claimed thickness deposited on and adhering to the coating of antimony doped tin oxide. Terneu

discovered that the inclusion of a fluorine doped tin oxide layer on an antimony doped tin oxide layer provided a low solar factor (solar energy) and emissivity see claim 19 and col. 5, lines 33-58. Therefore, it would be obvious to one having ordinary skill in the art to replace the second layer with a fluorine doped tin oxide in order to have lower solar factors and emissivity. Terneu teaches the thickness of each coating ranges from 100 to 500 nm (1000 to 5000 Angstroms) (refer to col. 5-6, especially col. 5, line 33). It would be obvious also to a skilled artisan to modify the glass article of McCurdy with the teachings of Terneu to provide thicknesses within the claimed ranges to effect the solar performance.

25. Regarding claim 23, McCurdy teaches an insulating glass unit for architectural glazings (col. 7, lines 24+) or window units (col. 1, lines 23+) having a U value (heat transfer coefficient) less than 0.4 (especially, col. 7, line 54+).

26. An insulating glass unit using a thickness of multilayered coatings and two glass panes are taught by McCurdy and Terneu and would exhibit the properties as claimed in 24 and 25.

27. Claims 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,780,149 to McCurdy et al. in view of USPN 6,231,971 to Terneu et al.

Regarding claim 26, McCurdy teaches a coated glass article comprising a glass substrate of 3 mm thickness, and at least a first and second coating, one of which is a coating of antimony doped tin oxide wherein the glass article exhibits a selectivity of 10 or greater (satisfying 13 or more) (see claim 6 and col. 5 and 7). McCurdy teaches the thickness of the first and second layers is dependent upon the desired solar performance of the stack (layered coatings) (col. 6, lines 57+). McCurdy is silent to the second coating being fluorine doped tin oxide of the claimed thickness deposited on and adhering to the coating of antimony doped tin oxide. Terneu

discovered that the inclusion of a fluorine doped tin oxide layer on an antimony doped tin oxide layer provided a low solar factor (solar energy) and emissivity see claim 19 and col. 5, lines 33-58. Therefore, it would be obvious to one having ordinary skill in the art to replace the second layer with a fluorine doped tin oxide in order to have lower solar factors and emissivity. Terneu teaches the thickness of each coating ranges from 100 to 500 nm (1000 to 5000 Angstroms) (refer to col. 5-6, especially col. 5, line 33). It would be obvious also to a skilled artisan to modify the glass article of McCurdy with the teachings of Terneu to provide thicknesses within the claimed ranges to effect the solar performance.

28. McCurdy further teaches a coated glass article exhibiting an emittance of less than 0.2 (see col. 7, lines 51+) meeting the limitations of claim 27.

29. Regarding claim 28, McCurdy teaches an article exhibiting a neutral color having the values in the CIELAB system as claimed (see col. 7, lines 7+). McCurdy teaches color being defined by the composition of the coated glass article and thickness of the coats (col. 6, line 64+), and specifically teaches a neutral color.

No patentable distinction is seen between the insulated glass unit of the combined references and that of the present claims.

***Response to Arguments***

30. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

31. In response to applicant's argument that Terneu is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be

reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). Applicant contends that Terneu teaches away from a fluorine doped tin oxide layer, since the purpose of Terneu addressed cost. Contrary, Terneu claims the very layer in patented claim 19 and teaches using such a layer. It is immaterial as to what purpose Terneu discloses the use of a fluorine doped tin oxide layer. Moreover, Terneu must have deemed such a layer to be essential, as he claims the very subject matter. Applicant further maintains that only during prosecution of the application of Terneu that Terneu disclosed the fluorine doped tin oxide layer. The Examiner has already stated on the record that the application or file history of Terneu is not germane. The rejection is over the *patent* of Terneu, not the application of Terneu.

32. Regarding Applicant's discussion on visible spectrum and spectral transmittances of McCurdy, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

33. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, it is immaterial that McCurdy teaches an undoped layer of tin/antimony, when Terneu cures this deficiency.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamra L. Dicus whose telephone number is (703) 305-3809. The examiner can normally be reached on Monday-Friday, 7:00-4:30 p.m., alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on (703) 308-0449. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-8329 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Tamra L. Dicus
Examiner
Art Unit 1774

February 23, 2003

CYNTHIA H. KELLY
SUPERVISORY PATENT EXAMINER
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